In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1-136. (Cancelled)

137. (Currently Amended) A method for detecting a mutant polymer comprising

contacting a polymer with one or a plurality of unique and distinct mutant-specific unit specific markers each labeled with a first detectable label,

contacting the polymer with a polymer-specific unit specific marker that binds to wild type and mutant polymers and is labeled with a second detectable label, and

analyzing the polymer for coincidence binding ~~of the presence~~ of the first and second detectable labels on the polymer,

wherein the first and second detectable labels are unique and distinct, the polymer is not in vitro amplified, and the coincident binding indicates the polymer is a mutant polymer.

138. (Original) The method of claim 137, wherein the polymer is a nucleic acid.

139. (Original) The method of claim 138, wherein the nucleic acid is a DNA or RNA.

140. (Cancelled)

141. (Original) The method of claim 137, wherein the mutant-specific unit specific markers are specific for a single nucleotide polymorphism, a deletion, an insertion, a genomic amplification, or an inversion.

142. (Original) The method of claim 137, wherein the first and second detectable labels are of the same type.

143. (Cancelled)

144. (Original) The method of claim 137, wherein the first and second detectable labels are fluorescent molecules.

145-147. (Cancelled)

148. (Original) The method of claim 137, wherein the coincident binding is detected by the coincident direct detection of the first and second detectable labels.

149. (Original) The method of claim 137, wherein the coincident binding is a proximal binding of the first detectable label that is a donor FRET fluorophore and the second detectable label that is an acceptor FRET fluorophore, and is detected by a signal from the acceptor FRET fluorophore upon laser excitation of the donor FRET fluorophore.

150-163. (Cancelled)

164. (Original) The method of claim 137, further comprising a column purification step.

165. (Original) The method of claim 137, wherein the coincident event is a color coincident event.

166. (Original) The method of claim 137, wherein the polymer is present in a nanoliter volume.

167. (Previously Presented) The method of claim 137, wherein the polymer is present at a frequency of 1 in 1,000,000 molecules in a sample.

168. (Original) The method of claim 137, wherein the unit specific markers are comprised of DNA, RNA, PNA, LNA or a combination thereof.

169. (Original) The method of claim 137, wherein unbound detectable labels are not removed prior to analysis using the single molecule detection system.

170. (Original) The method of claim 137, wherein the first and second detectable labels are provided as molecular beacon probes.

171. (Original) The method of claim 137, wherein at least the first or the second detectable label is attached to a nucleic acid molecule hybridized to a universal linker attached to a unit specific marker.

172. (Previously Presented) The method of claim 137, wherein the polymer is fixed to the solid support in a random orientation.

173. (Previously Presented) The method of claim 137, wherein the polymer is fixed to the solid support in a non-continuous manner.

174. (Original) The method of claim 137, wherein the binding of the mutant-specific unit specific marker and the polymer-specific unit specific marker to the polymer is determined by confocal detection.

175. (Original) The method of claim 137, wherein detection of coincident binding of both the polymer-specific unit specific marker and any one or more of the mutant-specific unit specific markers indicates the polymer is a mutant polymer.

176. (New) The method of claim 137, wherein the polymer is a single polymer.

177. (New) A method for detecting a mutant polymer comprising

contacting a polymer-containing sample with one or a plurality of unique and distinct mutant-specific unit specific markers each labeled with a first detectable label,

contacting the sample with a polymer-specific unit specific marker that binds to wild type and mutant polymers and is labeled with a second detectable label, wherein the first and second detectable labels are unique and distinct, and

detecting a single complex of a polymer and first and second detectable labels as an indicator of a single mutant polymer.